

Abstract

Bacteriophages, as viruses of bacteria, are the most abundant entity, populate every biotope where also bacteria live. One of the alternatives to combat infections caused by resistant strains of bacteria currently appear bacteriophage therapy, consists in the application of lytic bacteriophage, or only bacteriophage enzymes to inhibit bacterial growth. Thesis mentions the history of phage therapy, a crucial part of the thesis deals with a summary of current trends in bacteriophage therapy, beginning to develop in recent years. Many studies are dedicated to the possibilities of treatment of bacterial infections by phage lysates, including genetically modified bacteriophages and also application of bacteriophage enzymes themselves - endolysins, or a combination of the phage lysates and endolysins with antibiotics. The main interests in studies are the efficiency, specificity and safety of therapy. The effectiveness of bacteriophage therapy was already proved by many studies, both *in vitro* and *in vivo*. The safety of therapy for clinical usage needs to be prove by *in vivo* experiments.

Key words: bacteriophage, bacteriophage therapy, endolysins, enzybiotics, multiresistence